Please cancel claims 19-28 without prejudice.

1. (Original) A method for a storage operating system implemented in a storage system to concurrently perform readahead operations for a plurality of different read streams established in one or more files, directories, vdisks or luns stored in the storage system, the method comprising:

receiving a client read request at the storage system, the client read request indicating client-requested data for the storage operating system to retrieve from a file, directory, vdisk or lun stored in the storage system;

determining whether the received client read request matches any of a plurality of readset data structures ("readsets") allocated for the file, directory, vdisk or lun containing the client-requested data; and

performing readahead operations in accordance with a set of readahead metadata stored in a readset that is determined to match the received client read request.

2. (Original) The method of claim 1, further comprising:

allocating at least one readset for each of the one or more files, directories, vdisks or luns in which the plurality of different read streams is established;

generating a separate set of readahead metadata for each of the plurality of different read streams; and

storing each generated set of readahead metadata in a different readset allocated for the file, directory, vdisk or lun in which the read stream associated with the generated set of readahead metadata is established.

3. (Original) The method of claim 1, further comprising:

initializing each allocated readset to store a predetermined set of values.

4. (Original) The method of claim 2, wherein the number of readsets allocated for a file, directory, vdisk or lun depends on the size of that file, directory, vdisk or lun.

5. (Original) The method of claim 4, wherein the number of readsets allocated for a file, directory, vdisk or lun is dynamically increased as the size of that file, directory, vdisk or lun is increased.

6. (Original) The method of claim 1, wherein a first readset is determined to match the received client read request if the first readset stores a set of readahead metadata associated with a read stream that is extended by the client-requested data.

7. (Original) The method of claim 1, wherein a second readset is determined to match the received client read request when the client-requested data is located within a predetermined fuzzy range associated with the second readset.

8. (Original) The method of claim 7, wherein the fuzzy range is derived based on a multiple of a number of client-requested data blocks specified in the received client read request.

9. (Original) The method of claim 7, wherein the fuzzy range extends in both a forward direction and a backward direction in relation to a last data block retrieved in a read stream associated with the second readset.

10. (Original) The method of claim 1, wherein a third readset is determined to match the received client read request if the third readset is determined to be unused.

11. (Original) The method of claim 10, wherein the third readset is determined to be unused when a level value stored in the third readset equals a special indicator value.

12. (Original) The method of claim 1, wherein readahead operations are not performed if the storage operating system determines that the file, directory, vdisk or lun containing the client-requested data is accessed using a random access style.

13. (Original) The method of claim 12, wherein a DAFS cache hint included in the received client read request indicates that the file, directory, vdisk or lun containing the client-requested data is accessed using a random access style.

14. (Original) The method of claim 1, wherein readahead operations are not performed unless:

(i) a readset is determined to match the received client read request; and

(ii) the matching readset stores a set of readahead metadata associated with a read stream that is extended by the client-requested data past a predetermined data block or memory address.

15. (Original) The method of claim 1, further comprising:

if the received client read request does not match any of the readsets allocated for the file, directory, vdisk or lun containing the client-requested data, then performing the steps:

identifying the received client read request as being the first read request in a new read stream;

generating a set of readahead metadata associated with the new read stream;

selecting for reuse one of the readsets allocated for the file, directory, vdisk or lun containing the client-requested data; and

storing the generated set of readahead metadata associated with the new read stream in the readset selected for reuse.

16. (Original) The method of claim 15, wherein the readset selected for reuse stores a level value that is less than or equal to level values stored in each of the other readsets associated with the file, directory, vdisk or lun containing the client-requested data.

17. (Original) The method of claim 1, wherein the client read request received at the storage system is a file-based client read request.

18. (Original) The method of claim 1, wherein the client read request received at the storage system is a block-based client read request.

19-28 (Cancelled)

29. (Original) A storage system that employs a storage operating system to concurrently perform readahead operations for a plurality of different read streams established in one or more files, directories, vdisks or luns stored in the storage system, the method comprising:

means for receiving a client read request at the storage system, the client read request indicating client-requested data for the storage operating system to retrieve from a file, directory, vdisk or lun stored in the storage system;

means for determining whether the received client read request matches any of a plurality of readset data structures ("readsets") allocated for the file, directory, vdisk or lun containing the client-requested data; and

means for performing readahead operations in accordance with a set of readahead metadata stored in a readset that is determined to match the received client read request.

30. (Original) A computer-readable media comprising instructions for execution in a processor for the practice of a method for a storage operating system implemented in a storage system to concurrently perform readahead operations for a plurality of different read streams established in one or more files, directories, vdisks or luns stored in the storage system, the method comprising:

receiving a client read request at the storage system, the client read request indicating client-requested data for the storage operating system to retrieve from a file, directory, vdisk or lun stored in the storage system;

determining whether the received client read request matches any of a plurality of readset data structures ("readsets") allocated for the file, directory, vdisk or lun containing the client-requested data; and

performing readahead operations in accordance with a set of readahead metadata stored in a readset that is determined to match the received client read request.